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Check and Cash Transactions

A Cost Analysis For The Supermarket

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The Food Marketing Institute (FMI) is a non-profit association that conducts programs in research, education and public affairs on behalf of its 1,300 members—food retailers and wholesalers and their customers in the United States and overseas. FMI's domestic member companies operate over 17,000 retail food stores with a combined annual sales volume of $130 billion—half of all grocery sales in the United States. More than three-fourths of FMI's membership is comprised of independent supermarket operators or small regional firms. Its international membership includes more than 100 members from 40 nations.

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Executive Summary

Payment systems are a vital part of operations for all businesses. For the supermarket, the most common customer payment mechanisms are cash and check transactions. This special report was designed to help supermarket retailers better understand the cost involved in these transactions and to help prepare for the possibility of the new electronic method of payment.

This report provides industry benchmarks for the cost to handle three types of transactions: cash for payment, check for payment and check for cash only. When reviewing the results of this survey, it is important to remember that expenses at each step of the process of calculating costs can vary widely from company to company. For instance, costs will vary for labor rates, procedures instituted for counting cash and checks, armored and bank fees, and capital, as well as for other factors.

Results

For the companies participating in this survey, the average costs for accepting and handling each of the three types of transactions are:

- Cash transaction for purchase is $0.15.
- Check transaction for purchase is $0.42.
- Check transaction for cash only, is $0.30.

It is important for retailers to know their existing costs to help them assess the cost of any EFT system. It is equally as important to recognize, however, that there is no certainty to what extent, or over what period of time, customers would switch their payment practices to using an EFT system. Moreover, uses of EFT in a store could affect any one of the types of transactions covered in this report.

The questionnaire used to calculate these costs begins on page nine. By completing this questionnaire, a company can develop its own check and cash handling costs. FMI is also offering the computer program used to develop this study, which can be obtained by using the order form at the end of this report.

Introduction

Many retail establishments accept checks for the purchase price. However, supermarket companies expand this service for their customer by allowing customers to write checks for an amount over the purchase price, often without charge. Over and above this, some supermarket companies will accept and cash third party checks. Typically, these would be payroll and government checks. Checks are also important to supermarket operators because of the large volume of checks accepted by supermarkets. According to this survey, over 3,600 checks are cashed per week at each supermarket.

Offering a variety of services to their customers has always been the philosophy of the supermarket industry. Check cashing is just one of many available services.

However, what is the cost to the supermarket company for cashing checks?

In 1977, FMI conducted a survey to determine the cost of accepting checks. Because of the imminent effect of electronic funds transfer on the retail trade, FMI members decided to look again at these costs.

Today, the two most common methods of payment for the supermarket customer are checks and cash. Other forms of payment, such as food stamps and credit cards, are used less frequently, although this may differ according to individual stores. Plus, another form of payment, electronic funds transfer, is entering the arena. However, before considering the future, it is important to know how much the current systems cost.

In evaluating a new payment system, a retailer must look not only at the new alternative system's costs, but also look at the current systems which may be replaced by the new system. This research report will permit retailers to evaluate their cash and check handling procedures, as well as provide industry benchmarks for these costs.

The cost for handling cash was added to this study because it is unknown what impact Electronic Funds Transfer at the point of sale (EFT-POS) will have on cash transactions. Cash transactions may be as likely, or even more likely, than check transactions to be displaced by EFT-POS transactions.

The cost analysis for both cash and check handling includes all the costs from the time the customer hands the cashier the payment, through the handling costs in the store and at headquarters, to the depositing of the payment in the financial institution. The costs of keeping a supply of cash in the store, the cost of capital and of labor are all included in the calculations.

Profile of the Participants

In the Spring of 1984, FMI members in the United States were sent a questionnaire. The questionnaire was designed to collect data on check and cash handling costs. Seventy-seven companies, operating a total of 3,850 supermarkets, with $38.4 billion dollars in annual sales, completed and returned questionnaires.

Table 1 provides a picture of the average company participating in the survey.

Table 1

Average Company

Average Weekly Sales	$192,000
Average Number of Supermarkets	50
Average Annual Sales	$489,200,000
Average Number of Cash Customers/Week	12,676
Average Number of Checks for Purchase Customers	2,775

Table 2 describes the companies participating in the survey by the number of supermarkets operated by each company.

Table 2

Profile of Participating Companies by the Number of Supermarkets

Number of Supermarkets	Percent 100%
1	22%
2-10	23%
11-50	30%
51+	25%

We wish to thank those companies who returned questionnaires for their support of this very important project. We also wish to express our appreciation to the members of the FMI Committee on EFT who helped evaluate each phase of this survey as it was being developed.

Cost Components for Transactions

Twelve components were identified as factors which make up the cost to handle transactions. Each of these factors was analyzed, and has a corresponding section in the questionnaire. Following are the average costs for each of the three types of transactions by the different factors:

	Cash for Purchase	Check for Purchase	Check for Cash Only
Handling during purchase and check cashing	$0.09	$0.20	$0.12
Request, wait for, deliver change to registers	0.01	N/A	N/A
Pickup from registers	0.01	0.02	N/A
Turnin from registers	0.01	0.02	N/A
Control and accountability	0.02	0.03	0.03
Cash over/short	*	N/A	N/A
Cost of handling bad checks	N/A	0.02	0.02
Cost of NSF checks written off	N/A	0.03	0.03
Bank and ar nored fees	*	0.05	0.05
Courtesy Card Costs	N/A	0.01	0.01
Encoding/microfilming for deposit	N/A	0.01	0.01
Investment cost from acceptance until credit by banking system	0.01	0.03	0.03
TOTAL	$0.15	$0.42	$0.30

** Less than $0.01*

N/A = Not Applicable

NOTE: Some companies, 28 percent, charge a customer for cashing a check without a purchase. Of those who do charge, the majority, 62 percent, charge about $0.25 per transaction. For all companies responding to the survey, the average handling fee dropped to $0.21 when this charge was included.

Definitions of the Cost Components

Following are the elements used to develop each of the twelve cost factors described on page 6. For further explanation, please review the appropriate section in the questionnaire. This corresponding section is given in the parentheses after the definition.

1. Handling during purchase and check cashing — average transaction time (time from when the checker accepts tender from the customer through to the closing of the drawer) and labor costs (E)
2. Request, wait for and deliver change to registers — time involved in requesting, picking up and delivering change, number of cash customers and number of change requests (F)
3. Pickup from registers — time and labor involved for pickups (G)
4. Turnin from registers — time and labor involved in turnins (G)
5. Control and accountability — time and labor rates involved in preparing cash drawers and deposits, ordering change, controlling overages/shortages, preparing reports, follow up on bad checks (H)
6. Cash over/short — amount of cash overage/shortage and customer count (I)
7. Cost of handling badchecks — time and labor rate involved in maintaining bad check list, with follow-up, and number of bad checks (I)
8. Cost of NSF checks written off — amount of "not sufficient funds" cost and customer count (I)
9. Bank and armored fees — bank and armored fees and customer count (J)
10. Courtesy card costs — courtesy card machines, supplies and labor costs, check count, mailing costs (M)
11. Encoding/microfilming for deposit — encoding machine, supplies, microfilming, and check customer count (N)
12. Investment cost from acceptance until credit by banking system — time until payment is credited, permanent change fund per store and cost of capital (K, L)

The Methodology

There are fifteen sections to the entire Check and Cash Handling questionnaire. These are labelled as Sections A through O. In order to ease the burden of the companies participating, each company was asked to complete and return only one section of the questionnaire, Section B. (The entire questionnaire is published at the end of the report.) Section B includes all of the figures necessary to compute the total cost to handle both check and cash transactions. The remainder of the questionnaire contains all the calculations needed for computing the costs. All data from each company, except total company costs and courtesy card and encoding machine data, were weighted by the number of stores operated by each responding firm. Other figures were self weighting or weighted by number of machines.

The Questionnaire

Section A of the questionnaire was designed solely to help companies gather data at the store level. The section can be sent to the store, to be completed by the store manager.

Section B contains information from Section A, as well as information from additional sources, such as the general ledger, personnel records and the annual report. This section shows every number from the company which is needed to calculate the handling costs.

Sections C through O show the calculations necessary to provide the costs for cash and check transactions. It was designed to make use of the data from Section B. Therefore, no data other than what is required for Section B is necessary to complete these sections. The summation of the major components of the handling costs as well as the final conclusions are in Section O.

The entire questionnaire is published at the end of this report. It can be used by companies to calculate their costs per transaction as well as analyze how these final results were derived. Each line on the questionnaire is coded. The codes are used as directors to explain the calculations.

Calculating the Costs

As a service to the supermarket industry, FMI is offering the computer program used to develop this study. The program runs on an IBM PC™ with version 1.1 or above, with the Lotus 1-2-3™ software. It can be obtained by completing the order form in the back of the report.

CHECK AND CASH HANDLING STUDY QUESTIONNAIRE

The entire questionnaire used to complete this study is found on the following pages. The questionnaire was designed for Food Marketing Institute by Arthur Andersen & Co.

The questionnaire has 13 sections:

Section A was designed to be sent to the store(s) to gather information that is required from the store level.

Section B is the required information necessary to make all calculations in Sections C through O.
Section B provides timings for certain functions. These timings were developed by Arthur Andersen & Co. from actual time and motion studies at various supermarkets. If a company does not have these timings it can use the timings provided in parentheses next to the questions.

Sections C through O consists of the calculations.

A. STORE QUESTIONNAIRE - - This section is to be used to gather information at the store level.

1. The average number of customers per supermarket per day:

	Purchase Payment Method			
	CASH	CHECKS	PAYROLL CHECKS FOR CASH ONLY	PERSONAL CHECKS FOR CASH ONLY
Monday.....	_____	_____	_____	_____
Tuesday.....	_____	_____	_____	_____
Wednesday.....	_____	_____	_____	_____
Thursday.....	_____	_____	_____	_____
Friday.....	_____	_____	_____	_____
Saturday.....	_____	_____	_____	_____
Sunday.....	_____	_____	_____	_____
TOTAL NUMBER OF CUSTOMERS	_____	_____	_____	_____
	_____	_____	_____	_____

	CASH	CHECKS FOR PURCHASE INC. CASH OVER PURCHASE	PERSONAL & PAYROLL CHECKS FOR CASH ONLY
2. Average transaction size per customer.....	$_____	$_____ _____	$_____

3. Average total weekly sales per store..... $_____total weekly sales

4. Average number of checks for purchase, including those for amounts above purchase, that are approved, per week per supermarket at:

The service desk..... _____number of checks per week

The checkout lane..... _____number of checks per week

TOTAL (this should agree with the total in #1 for check purchases)..... _____total number of checks per week

5. Typical fee charged for cashing a check (Do not include tokens which can then be redeemed.)

for cash..... $_____per check
for purchase..... $_____per check

6. On average, how many times each day do checkers request change or loan of currency?

Monday..... _____times

Tuesday..... _____times

Wednesday..... _____times

Thursday..... _____times

Friday..... _____times

Saturday..... _____times

Sunday..... _____times

Total Times Change is Requested... _____total times

7 and 8. What is the number of cash, checks, food stamp and coupon pieces:
(Count each piece of paper or coin as one--do not base on $ values)

PER PICK-UP		PER TURN-IN
_____	.....Number of coins.....	_____
_____	.....Number of bills.....	_____
_____	....Number of food stamp coupons....	_____
_____	..Number of manufacturers' coupons..	_____
_____	Number of checks	_____

9. How many times is each pick-up counted per supermarket per day?

10. How many times is each turn-in counted per supermarket per day?

_____times	..... By Checker	_____times
_____times	..... By Supervisor	_____times
_____times	..... By Bookkeeper	_____times

11. How many minutes does it take each day to:

Roll coins?..... _____minutes per day

Balance registers?..... _____minutes per day

Prepare cash portion of bank deposit (counting coin and cash bundles and posting to deposit slip)?..... _____minutes per day

Prepare check portion of bank deposit?..... _____minutes per day

Pass deposit to armored service or take to bank?..... _____minutes per day

Prepare cash portion of daily sales reports?..... _____minutes per day

Prepare check portion of daily sales reports?..... _____minutes per day

12. How many minutes does it take each week to:

Order change from armored service or the bank?..... _____minutes per week

Advise checkers of unacceptable over/shorts?..... _____minutes per week

Prepare security reports of over/short warnings, etc?..... _____minutes per week

Prepare cash portion of weekly sales reports?..... _____minutes per week

Prepare check portion of weekly sales reports?..... _____minutes per week

Compile and distribute bad check list and maintain it?..... _____minutes per week

Follow up on bad checks?..... _____minutes per week

13. On average how much is each store's permanent change fund?..... $_____average permanent change fund per store

14. How long does it take to process an application for a check cashing card?..... _____seconds per check cashing card

15. How many applications for check cashing are processed in a week (new and replacements)?..... _____applications

- END OF SECTION A -

B. **REQUIRED INFORMATION** -- This information will be used to make the final calculations. Timings developed by Arthur Andersen & Co. are in parentheses, and can be used as your own figures.

INFORMATION ITEM NEEDED		YOUR ANSWERS	AA&Co. Timings
General Information			
1. Total number of supermarkets.....	B1	_____supermarkets	
2. Average weekly sales for your typical supermarket	B2	$_____weekly sales	
3. Company annual retail sales for the stores in #1	B3	$_____million annual sales	
Average Number per Supermarket Information			
4. Number of cash customers per week per store.....	B4	_____customers	
5. Number of checks accepted per week per store:			
Checks cashed for cash at service desk			
Payroll checks.....	B5a	_____checks	
Personal checks.....	B5b	_____checks	
Checks approved at service desk for purchase....	B5c	_____checks	
Checks approved at register for purchase (including checks greater than purchase).....	B5d	_____checks	
Total Checks Accepted.....	B5e	_____total checks	
6. Average wage rates:			
Checker.....	B6a	$_____direct cost	
Front-end Supervisor.....	B6b	$_____direct cost	
Bookkeeper.....	B6c	$_____direct cost	
7. Average fringe benefits as a % of direct wages			
Checker.....	B7a	_____% of direct wages	
Supervisor.....	B7b	_____% of direct wages	
Bookkeeper.....	B7c	_____% of direct wages	

8. Breaks as percent of total hours.....	B8	_____%	
9. Idle time as percent of total hours.....	B9	_____%	(6.2%)
10. Average time to accept cash during transaction.....	B10	_____seconds	(25.5)
11. Average time to accept and approve check during purchase transaction.....	B11	_____seconds	(65.2)
12. Average time to cash a payroll check at service desk.....	B12	_____seconds	(98)
13. Average time to cash a personal check at the service desk.....	B13	_____seconds	(38)
14. Percentage of total checks cashed that are payroll checks.....	B14	_____%	
15. Average time to accept a check at the register (for purchase or greater than purchase) at the service desk.....	B15	_____seconds	(39.7)
16. Average time to approve a check at the service desk.....	B16	_____seconds	(16)
17. Average number of change and loan requests per week per store.....	B17	_____requests	
18. Average number of seconds to request change or loan.....	B18	_____seconds	(12)
19. Average number of seconds to pick up change or loan.....	B19a	_____seconds	(120)
OR			
Average number of seconds to deliver change	B19b	_____seconds supervisor	(120)
or loan.....	B19c	_____seconds bookkeeper	(120)
20. If change and loans are delivered, average percent of time checker waits idle when change or loan is delivered.....	B20	_____%	(40%)
21. Average number of interim pickups (during the checker's shift) per week per supermarket....	B21	_____pickups	

22. Average number of final turn-ins (at end of checker's shift) per week per supermarket..... B22 _____turn-ins

23. Average number of travel seconds per pickup.... B23a _____seconds (53)

B23b _____seconds

B23c _____seconds

24. Average number of travel seconds per turn-in... B24a _____seconds (46.9)

B24b _____seconds

B24c _____seconds

25. Average number of checks, cash, food stamps, and manufacturers' coupons in a typical pick-up and turn-in (number of pieces):

	Pick-ups			Turn-ins
B25a	_____	.....number of coins.....	B25g	_____
B25b	_____	.....number of bills	B25h	_____
B25c	_____	....number of food stamps	B25i	_____
B25d	_____	number of manufacturer's coupons	B25j	_____
B25e	_____	.....number of checks	B25k	_____
B25f	_____	.....Total.....	B25l	_____

26. Time to count a pick-up:

Cash

checker..... B26a _____seconds (39)

supervisor..... B26b _____seconds (26)

bookkeeper..... B26c _____seconds (26)

Checks

checker..... B26d _____seconds (42)

supervisor..... B26e _____seconds (53)

bookkeeper..... B26f _____seconds (53)

27. Time to count a turn-in:

Cash

checker.....	B27a	_____seconds	(127)
supervisor.....	B27b	_____seconds	(94)
bookkeeper.....	B27c	_____seconds	(94)

Checks

checker.....	B27d	_____seconds	(84)
supervisor.....	B27e	_____seconds	(58)
bookkeeper.....	B27f	_____seconds	(58)

28. Number of times each pick-up is counted per week per store:

By checker.....	B28a	_____times
By supervisor.....	B28b	_____times
By bookkeeper.....	B28c	_____times

29. Average number of times each turn-in is counted per week per store:

By checker.....	B29a	_____seconds
By supervisor.....	B29b	_____seconds
By bookkeeper.....	B29c	_____seconds

30. Average number of seconds to prepare a typical drawer and verify its results:

By checker.....	B30a	_____seconds	(91)
By bookkeeper.....	B30b	_____seconds	(41)

31. Average number of seconds per check to encode checks for deposit..... B31 _____seconds (2.6)

32. Average number of seconds per check to add up checks for deposit..... B32a _____seconds (3.4)

B32b _____seconds (3.4)

33. Average number of minutes per store per day to:

Roll coins.....	B33a	_____minutes
Balance registers.....	B33b	_____minutes
Prepare cash portion of bank deposit (counting cash bundles, coin and posting to deposit slip).....	B33c	_____minutes
Prepare check portion of bank deposit (excluding adding up the checks).....	B33d	_____minutes
Pass deposit to armored service or take to bank....	B33e	_____minutes
Prepare cash portion of daily sales report.....	B33f	_____minutes
Prepare check portion of daily sales report.....	B33g	_____minutes

34. How many seconds does it take to process an application for a check cashing card..... B34 _____seconds
(63)

35. How many new and replacement check cashing card applications are processed per week per store..... B35 _____applications

36. How many minutes does it take per store per <u>week</u> to:

Order change from armored or bank.....	B36a	_____minutes
Advise checkers of unacceptable over/shorts.....	B36b	_____minutes
Prepare security reports of over/short warnings, etc.....	B36c	_____minutes
Prepare cash portion of weekly sales report.....	B36d	_____minutes
Prepare check portion of weekly sales report.....	B36e	_____minutes
Compile & distribute bad check list and maintain this list.....	B36f	_____minutes
Follow up on bad checks.....	B36g	_____minutes

37. <u>Annual</u> total company cash shortage..... B37 $_____

38. <u>Annual</u> total company armored pickup fee..... B38 $_____

39. <u>Annual</u> total company bank/armored fee for currency and change delivery..... B39 $_____

40. Annual total company bank fee for handling checks.... B40 $_____

41. Annual total company bank and armored fee for special counting services..... B41 $_____

42. What percent of your stores are encoding checks?..... B42 _____% stores

43. Annual Not Sufficient Funds (NSF) check costs:

NSF checks written off..... B43a $_____

Related bank charges (all returned checks, net of recoveries from customers)..... B43b $_____

Central office labor costs..... B43c $_____

Collection agency & court fees..... B43d $_____

44. Central office cost of microfilming checks..... B44 $_____ (if applicable)

45. Purchase cost of an encoding machine..... B45 $_____

46. Annual maintenance cost of an encoding machine..... B46 $_____

47. Average number of encoding machines per store..... B47 _____machines

48. Annual cost of encoding supplies..... B48 $_____

49. Cost of courtesy card, maintenance & issuance:

Annual supply costs for card stock and and applications..... B49a $_____

Annual central office labor to process applications..... B49b $_____

Annual data processing costs for issuance and transactions..... B49c $_____

Annual credit investigation costs..... B49d $_____

Annual mailing to customers..... B49e $_____

Courtesy card machine costs (including maintenance):

Purchase cost of a courtesy card machine.....	B49f	$_____
Annual maintenance cost of a courtesy card machine.....	B49g	$_____
Average number of courtesy card machines per store (please use fraction if necessary)...	B49h	_____machines
Other annual costs.....	B49i	$_____
50. Percentage debt financing.....	B50	_____%
51. Percentage equity financing.....	B51	_____%
52. Average interest rate on debt.....	B52	_____%
53. Price earnings ratio.....	B53	_____
54. Effective tax rate.....	B54	_____%
55. Average value of a cash purchase transaction.....	B55	$_____
56. Average value of a check purchase transaction.....	B56	$_____
57. Average value of a check for cash transaction.....	B57	$_____
58. Average number of days from acceptance of cash to credit at the bank.....	B58	_____days
59. Average number of days from acceptance of checks to credit at the bank.....	B59	_____days
60. Average permanent change fund per store.....	B60	$_____
61. Fee charged for cashing a check		
For cash.....	B61a	$_____
For purchase.....	B61b	$_____

- END OF SECTION B -

The remainder of this questionnaire, Sections C - O, calculates the final results. The Codes are alphabetical to match the section letter.

C. AVERAGE CUSTOMERS PER WEEK

		CASH	CHECK FOR PURCHASE	CHECK FOR CASH
Customers per week from stores submitting questionnaires	C1	_____ (B4)	C10 _____ (B5c+B5d)	C19 _____ (B5a+B5b)
Weekly sales from stores submitting questionnaires	C2	$_____ (B2)	C11 $_____ (B2)	C20 _____ (B2)
Customers as a percent of store sales	C3	_____% (C1/C2)	C12 _____% (C10/C11)	C21 _____% (C19/C20)
Total chain annual sales	C4	$_____ (B3)	C13 $_____ (B3)	C22 $_____ (B3)
Customers as a percent of store sales	C5	_____% (C3)	C14 _____% (C12)	C23 _____% (C21)
Total chain annual customers	C6	_____ (C4xC5)	C15 _____ (C13xC14)	C24 _____ (C22xC23)
Divide by 52 weeks	C7	52	C16 52	C25 52
Divide by number of stores	C8	_____ (B1)	C17 _____ (B1)	C26 _____ (B1)
Average customers per store per week	C9	_____ ((C6/C7)/C8)	C18 _____ ((C15/C16)/C17)	C27 _____ ((C24/C25)/C26)

D. WAGE RATE SCHEDULE

		CHECKER		SUPERVISOR		BOOKKEEPER
Average hourly wage rate	D1	$_____ (B6a)	D9	$_____ (B6b)	D17	$_____ (B6c)
Fringe benefits percent	D2	_____% (B7a)	D10	_____% (B7b)	D18	_____% (B7c)

		CHECKER		SUPERVISOR		BOOKKEEPER
Average hourly cost.....	D3	$_____ (D1x(1+D2))	D11	$_____ (D9x(1+D10))	D19	$_____ (D17x(1+D18))
Break percent.....	D4	_____% (B8)	D12	_____% (B8)	D20	_____% (B8)
Idle percent.....	D5	_____% (B9)	D13	_____% (B9)	D21	_____% (B9)
Productive percent.....	D6	_____% (1-D4-D5)	D14	_____% (1-D12-D13)	D22	_____% (1-D20-D21)
Effective hourly cost.....	D7	$_____ (D3/D6)	D15	$_____ (D11/D14)	D23	$_____ (D19/D22)
Cost per second.....	D8	$_____ (D7/3600)	D16	$_____ (D15/3600)	D24	$_____ (D23/3600)

E. HANDLING DURING PURCHASE/CHECK CASHING

		CASH		CHECK FOR PURCHASE		CHECK FOR CASH		PAYROLL CHECK FOR CASH
Average time for checker to accept tender from customer, enter amount tendered on register, place in drawer, return change and close drawer.....	E1	_____ (B10)	E4	_____ (B11)	E7	_____ (B12)	E10	_____ (B13)
Checker wage rate per second.....	E2	_____ (D8)	E5	_____ (D8)	E8	_____ (D8)	E11	_____ (D8)
Total cost per transaction.....	E3	_____ (E1xE)	E6	_____ (E4xE5)	E9	_____ (E7xE8)	E12	_____ (E10xE11)

F. REQUEST, WAIT FOR, AND DELIVER CHANGE

		CHECKER	SUPERVISOR	BOOKKEEPER
How many seconds does it take to request change.....	F1	_____ seconds (B18)	N/A	N/A

		CHECKER		SUPERVISOR		BOOKKEEPER
How many seconds does it take for the checker to go pick up the change..	F2	_____seconds (B19a)				
or						
To deliver the change and return to the cash office.....			F13a	_____seconds (B19b)	F13b	_____seconds (B19c)
If change is delivered what percent of the time does the checker have to wait idle while the change is being delivered.....	F3	_____percent (B20)				
Checker delay time: delivery time times percent of time delayed divided by 2 (since checker is only delayed until change is delivered not during trip back to cash office..	F4	_____ (F13xF3)/2)				
Total seconds per change request.....	F5	_____seconds (F1+F2+F4)	F14	_____seconds (F13a)	F17	_____seconds (F13b)
Cost per second.....	F6	$_____ (D8)	F15	$_____ (D16)	F18	$_____ (D24)
Cost per change request.....	F7	$_____ (F5xF6)	F16	$_____ (F14xF15)	F19	$_____ (F17xF18)
Total cost per change request.....	F8	$_____ (F7+F16+F19)				
Number of change requests per week.....	F9	_____ (B17)				
Total cost per week.....	F10	$_____ (F8xF9)				
Number of cash customers per week.....	F11	_____ (B4)				
Average cost of change request/cash transaction.....	F12	$_____ (F10/F11)				

G. PICK-UP/TURN-IN FROM REGISTERS

		PICK-UPS		TURN-INS	
How many pick-ups and turn-ins are made each week	G1	_____ (B21)	G54	_____ (B22)	
How many seconds does it take to physically travel for pick-up or turn-in					
By checker	G2a	_____seconds (B23a)	G55a	_____seconds (B24a)	
By supervisor	G2b	_____seconds (B23b)	G55b	_____seconds (B24b)	
By bookkeeper	G2c	_____seconds (B23c)	G55c	_____seconds (B24c)	
TOTAL	G3	_____seconds (Total G2a-G2c)	G56	_____seconds (Total G55a-G55c)	
Percent of cash, checks, food stamps, and coupons comprised by:					
coins	G4	_____% (B25a/B25f)	G57	_____% (B25g/B25l)	
bills	G5	_____% (B25b/B25f)	G58	_____% (B25h/B25l)	
food stamps	G6	_____% (B25c/B25f)	G59	_____% (B25i/B25l)	
coupons	G7	_____% (B25d/B25f)	G60	_____% (B25j/B25l)	
checks	G8	_____% (B25e/B25f)	G61	_____% (B25k/B25l)	
TOTAL	G9	_____% (Total G4-G8)	G62	_____% (Total G57-G61)	

Travel time per pick-up of turn-in

		PICK-UP CASH		PICK-UP CHECKS		TURN-IN CASH		TURN-IN CHECKS
Checker	G10	_____ (G2ax(G4+G5)	G13	_____ (G2axG8)	G63	_____ (G55ax(G57+G58)	G66	_____ (G55axG61)
Supervisor	G11	_____ (G2bx(G4+G5)	G14	_____ (G2bxG8)	G64	_____ (G55bx(G57+G58)	G67	_____ (G55bxG61)
Bookkeeper	G12	_____ (G2cx(G4+G5)	G15	_____ (G2cxG8)	G65	_____ (G55cx(G57+G58)	G68	_____ (G55cxG61)

How long does it take to count the tender in the pick-up or turn-in:

	PICK-UP CASH	PICK-UP CHECKS	TURN-IN CASH	TURN-IN CHECKS
Checker..... G16	_____ (B26a)	G19 _____ (B26d)	G69 _____ (B27a)	G72 _____ (B27d)
Supervisor..... G17	_____ (B26b)	G20 _____ (B26e)	G70 _____ (B27b)	G73 _____ (B27e)
Bookkeeper..... G18	_____ (B26c)	G21 _____ (B26f)	G71 _____ (B27c)	G74 _____ (B27f)

How many times is the pick-up or turn-in counted:

	PICK-UPS	TURN-INS
Checker..... G22	_____ (B28a)	G75 _____ (B29a)
Supervisor..... G23	_____ (B28b	G76 _____ (B29b)
Bookkeeper..... G24	_____ (B28c)	G77 _____ (B29c)

Count time per pick-up or turn-in:

	PICK-UP CASH	PICK-UP CHECKS	TURN-IN CASH	TURN-IN CHECKS
Checker..... G25	_____ (G16XG22)	G28 _____ (G19XG22)	G78 _____ (G69XG75)	G81 _____ (G72XG75)
Supervisor..... G26	_____ (G17XG23)	G29 _____ (G20XG23)	G79 _____ (G70XG76)	G82 _____ (G73XG76)
Bookkeeper..... G27	_____ (G18XG24)	G30 _____ (G21XG24)	G80 _____ (G71XG77)	G83 _____ (G74XG77)

Total count and travel time per per pick-up or turn-in

	PICK-UP CASH	PICK-UP CHECKS	TURN-IN CASH	TURN-IN CHECKS
Checker..... G31	_____ (G10+G25)	G34 _____ (G13+G28)	G84 _____ (G63+G78)	G87 _____ (G66+G81)
Supervisor..... G32	_____ (G11+G26)	G35 _____ (G14+G29)	G85 _____ (G64+G79)	G88 _____ (G67+G82)
Bookkeeper..... G33	_____ (G12+G27)	G36 _____ (G15+G30)	G86 _____ (G65+G80)	G89 _____ (G68+G83)

Wage rate per second-checker..... G37 $_____ (D8)

Wage rate per second-suprevisor..... G38 $_____ (D16)

Wage rate per second-bookkeeper..... G39 $_____ (D24)

Total cost per pick-up or turn-in:

		PICK-UP CASH		PICK-UP CHECKS		TURN-IN CASH		TURN-IN CHECKS
Checker	G40	_____ (G31xG37)	G44	_____ (G34xG37)	G90	_____ (G84xG37)	G94	_____ (G87xG37)
Supervisor	G41	_____ (G32xG38)	G45	_____ (G35xG38)	G91	_____ (G85xG38)	G95	_____ (G88xG38)
Bookkeeper	G42	_____ (G33xG39)	G46	_____ (G36xG39)	G92	_____ (G86xG39)	G96	_____ (G89xG39)
Total	G43	_____ (Total G40-42)	G47	_____ (Total G44-46)	G93	_____ (Total G90-92)	G97	_____ (Total G94-96)

Total weekly costs of pickups and turn-ins:

		PICK-UP CASH		PICK-UP CHECKS		TURN-IN CASH		TURN-IN CHECKS
	G48	$_____ (G43xG1)	G51	$_____ (G47xG1)	G98	$_____ (G93xG54)	G101	$_____ (G97xG54)
Average weekly customers	G49	_____ (B4)	G52	_____ (B5c+B5d)	G99	_____ (B4)	G102	_____ (B5c+B5d)
Pick-up and turn-in cost/customer	G50	$_____ (G48/G49)	G53	$_____ (G51/G52)	G100	$_____ (G98/G99)	G103	$_____ (G101/G102)

H. CONTROL AND ACCOUNTABILITY

How many cash drawers are prepared each week (Same as number of drawer turn-ins) H1 _____ (B22)

		CHECKER	SUPERVISOR	BOOKKEEPER
How many seconds does it take to prepare a drawer and for the checker to verify its contents	H2	_____ (B30a)	N/A	H6 _____ (B30b)
Total seconds/week	H3	_____ (H1xH2)	N/A	H7 _____ (H1xH6)
How many seconds does it take to add up a check when preparing a deposit		N/A	H4 _____ (B32a)	H8 _____ (B32b)
Total seconds/week to add up checks when preparing deposit		N/A	H5 _____ (H4x(C18+C27))	H9 _____ (H8x(C18+C27))

How many minutes does it take each day to:

		CASH	CHECKS
Roll coins.....	H10	_____ (B33a)	
Balance the register.....	H11	_____ (B33b)	
Prepare the cash portion of the bank deposit.....	H12	_____ (B33c)	
Prepare the check portion of the bank deposit.....	H17		_____ (B33d)
Pass the cash to the armored service or take it to the bank.....	H13	_____ (B33e)	
Prepare cash portion of daily sales report.....	H14	_____ (B33f)	
Prepare check portion of daily sales report.....	H18		_____ (B33g)
Total minutes/day.....	H15	_____ (Total H10-14)	H19 _____ (H17+H18)
Total seconds/week-cash.....	H16	_____ (H15x60x7)	
Total seconds/week-checks.....	H20		_____ (H19x60x7)

How many minutes does it take each week to:

		CASH	CHECKS
Order change from armored or the bank.....	H21	_____ (B36a)	
Advise checkers of unacceptable register short/overs.....	H22	_____ (B36b)	

		CASH	CHECKS
Prepare reports to advise security department of warnings, etc.....	H23	_____ (B36c)	
Prepare cash portion of weekly sales report.....	H24	_____ (B36d)	
Prepare check portion of weekly sales report.....	H27		_____ (B36e)
Compile and distribute head check list and maintain it.....	H28		_____ (B36f)
Follow up on bad checks.....	H29		_____ (B36g)
Total.....	H25	_____ (Total H21-24)	H30 _____ (Total H27-29)
Total seconds/week-cash.....	H26	_____ (H25x60x7)	
Total seconds/week-checks.....	H31		_____ (H30x60x7)
Total seconds/week.....	H32		_____ (H26+H31)

		CHECKER	SUPERVISOR	BOOKKEEPER
Total seconds per week for control and accountability.....	H33	_____ (H3)	H36 _____ (H5)	H39 _____ (H7+H9+H16+H20+H32)
Rate per second.....	H34	$_____ (D8)	H37 $_____ (D16)	H40 $_____ (D24)
Cost per week.....	H35	$_____ (H33xH34)	H38 $_____ (H36xH37)	H41 $_____ (H39xH40)
Total costs.....	H42	$_____ (H35+H38+H41)		

		CASH		CHECKS
Total costs allocated cash/checks....	H43	_____ (H3xD8)+ ((H7+H16+H26)xD24)	H44	_____ (H5xD16)+ ((H9+H20+H31)xD24)
Divided by average customers per week.....	H45	$_____ (B4)	H47	$_____ (C18+C27)
Total cost per transaction.....	H46	$_____ (H43/H45)	H48	$_____ (H44/H47)

I. CASH SHORTAGE AND BAD CHECKS

		CASH		CHECKS
Annual cash shortage/NSF costs for cash.....	I1	$_____ (B37)	I7	$_____ (B43a+B43b+B43c+B43d)
Divide by number of stores.....	I2	$_____ (B1)	I8	$_____ (B1)
Divide by 52 weeks.....	I3	52		52
Weekly cash shortage/NSF cost per week.....	I4	$_____ ((I1/I2)/I3)	I10	$_____ ((I7/I8)/I9)
Total customers/week/store.....	I5	_____ (B4)	I11	_____ (C18+C27)
Average cash shortage/NSF costs per transaction.....	I6	_____ (I4/I5)	I12	_____ (I10/I11)
Minutes per week to compile and distribute "bad check list" and maintain it.....	I13	_____ (B36f)		
Follow-up on bad checks.....	I14	_____ (B36g)		
Total seconds per week.....	I15	_____ (I13+I14)x60		
Rate per second.....	I16	_____ (D16)		
Number of checks accepted per week....	I17	_____ (C18+C27)		
Cost of handling bad checks.....	I18	$_____ ((I15xI16)/I17)		
Total costs associated with bad checks.....	I19	$_____ (I12+I18)		

J. BANK AND ARMORED FEES

		CASH	CHECKS
Annual armored pick-up fees.....	J1	$_____ (B38)	
Total pieces picked up-cash & checks ..	J2	$_____ ((B25a+B25b)xB21) +((B25g+B25h)xB22)	J14 $_____ (C18+C27)
Percent attributable to:	J3	$_____ (J2/(J2+J14))	J15 $_____ (J14/(J2+J14))
Armored pick-up fees-allocated.....	J4	$_____ (J1xJ3)	J16 $_____ (J1xJ15)
Annual bank/armored fees for currency and change.....	J5	$_____ (B39)	
Annual bank/armored fees for special counting services.....	J6	$_____ (B41)	
Total.....	J7	$_____ (Total J4-6)	
Divide by number of stores.....	J8	_____ (B1)	J17 _____ (B1)
Divide by 52 weeks.....	J9	52	J18 52
Weekly cost per store.....	J10	$_____ ((J7/J8)/J9)	J19 $_____ ((J16/J17)/J18)
Total customers/week/store			
Cash.....	J11	$_____ (B4)	
Checks.....			J20 _____ (C18+C27)
Average costs per transaction.....	J12	$_____ (J10/J11)	J21 $_____ (J19/J20)
Annual bank fee for check handling.....			J22 $_____ (B40)
Divide by number of stores.....			J23 _____ (B1)
Divide by 52 weeks.....			J24 52
Bank fee/week/store.....			J25 $_____ ((J22/J23)/J24)
Total check customers/week/store.....			J26 _____ (C18+C27)

		CASH		CHECKS
Average check handling cost/transaction.....			J27	_____ (J25/J26)
Average cost per transaction.....	J13	$_____ (J12)	J28	$_____ (J21+J27)

K. COST OF CAPITAL CALCULATION

Sources of financing:

Debt	K1	_____% (B50)
Equity	K2	_____% (B51)
TOTAL	K3	_____% (K1+K2)

Average interest rate on debt.....K4 _____% (B52)

Average cost of equity capital:

Price earnings ratio (independents use).....	K5	_____% (B53)
Effective tax rate.....	K6	_____% (B54)
Cost of equity capital.....	K7	_____% ((1/K5)/K6)
Interest rate X debt %.....	K8	_____% (K1xK4)
Equity cost X equity %.....	K9	_____% (K2xK7)
Total cost of capital.....	K10	_____% (K8+K9)

L. INVESTMENT COST

	CASH PURCHASE	CHECK PURCHASE	CHECK FOR CASH
Average value of a purchase transaction.....L1	$_____ (B55)	L5 $_____ (B56)	L9 $_____ (B57)
Average number of days from time of accepting cash/checks until funds are credited at the bank.....L2	_____ (B58)	L6 _____ (B59)	L10 _____ (B59)
Cost of capital.....L3	_____% (K10)	L7 _____% (K10)	L11 _____% (K10)
Average float cost per transaction.....L4	$_____ (L1xL2xL3/360)	L8 $_____ (L5x6xL7/360)	L12 $_____ (L9xL10xL11/360)
Average permanent change fund per store.....L13	$_____ (B60)		
Cost of capital.....L14	_____% (K10)		
Annual investment cost of change fund.L15	$_____ (L13XL14)		
Average weekly investment cost of change fund.....L16	$_____ (L15/52)		
Number of transactions per week.....L17	_____ (B4)		
Change fund investment cost per transaction.....L18	$_____ (L16/L17)		
Total investment cost per transaction.L19	$_____ (L4+L18)	L20 $_____ (L8)	L21 $_____ (L12)

M. COST OF COURTESY CARD INCLUDING MAINTENANCE AND INSURANCE

Annual supply costs for card stock and applications.....M1 $_____ (B49a)

Annual central office labor to supply applications.....M2 $_____ (B49b)

Annual data processing costs for issuance and transactions.....M3 $_____ (B49c)

Annual credit investigation costs.....M4 $_____
(B49d)

Annual mailing to customers.....M5 $_____
(B49e)

Annual other costs.....M6 $_____
(B49i)

Annual maintenance costs for a courtesy card machine.....M7 $_____
(B49g)

Total costs.....M8 $_____
(Total M1-7)

Divided by 52 weeks.....M9 52

Divided by number of stores.....M10 _____
(B1)

Cost per week per store.....M11 $_____
((M8/M9)/M10)

Number of checks accepted in a week.....M12 _____
(C18+C27)

Cost per transaction.....M13 $_____
(M11/M12)

Courtesy card purchase costs .....M14 $_____
(B49f)

Average machines per store.....M15 _____machines
(B49h)

Total cost for courtesy card machines.....M16 _____
(M14xM15)

Total checks approved per week per store.....M17 _____
(C18+C27)

Times 52 weeks.....M18 _____
(M17x52)

Times 5 years of useful life.....M19 5

Total number of checks in a machine's useful life.....M20 _____
(M18xM19)

Depreciation cost per check for courtesy card machines.....M21 _____ (M16/M20)

Time to process a check cashing card application.....M22 _____ seconds (B34)

Number of applications processed in a week.....M23 _____ (B35)

Total seconds per week to process applications.....M24 _____ seconds (M22xM23)

Average wage rate per second.....M25 $_____ (D16)

Cost per week to process applications.M26 $_____ (M24xM25)

Cost per check accepted to process applications.....M27 $_____ (M26/M17)

Total cost of courtesy card.....M28 $_____ (M13+M21+M27)

N. COST OF ENCODING/MICROFILMING FOR DEPOSIT

Annual maintenance cost of an encoding machine.....N1 $_____ (B46)

Annual cost of encoding supplies.....N2 $_____ (B48)

Central office cost of microfilming checks.....N3 $_____ (B44)

Total annual costs.....N4 $_____ (Total N1-3)

Divided by 52 weeks.....N5 $_____ (N4/52)

Divided by number of stores.....N6 $_____ (N5/B1)

Average number of check customers per week per store.....N7 _____ (C18+C27)

Cost of encoding & microfilming per transaction.....N8 $_____ (N6/N7)

Purchase cost of an encoding machine..N9 $_____ (B45)

Total checks encoded per week per store.....N10 _____ (C18+C27)

Times 52 weeks.....N11 _____ (N10x52)

Times 5 years useful life.....N12 _____

Total number of encoded checks in a machine's useful life.....N13 _____ (N11xN12)

Total cost per transaction for encoding machines.....N14 $_____ (N9/N13)

How many seconds does it take to encode a check for deposit.....N15 _____seconds (B31)

Total seconds per week.....N16 _____seconds (N15xN10)

Average wage rate per second.....N17 $_____ (D24)

Cost per week to encode checks.....N18 $_____ (N16xN17)

Average cost per transaction to encode a check.....N19 $_____ (N18/N10)

Total cost for encoding, microfilming per transaction.....N20 $_____ (N8+N14+N19)

O. SUMMARY OF COSTS PER PURCHASE TRANSACTION

	CASH PURCHASE	CHECK PURCHASE	CHECK FOR CASH
Handling during purchase and check cashing.....01	$_____ (E3)	010 $_____ (E6)	022 $_____ ((E9xB5a)+(E12x B5b)/B5a+B5b)
Request, wait for, and deliver change to registers.....02	$_____ (F12)	N/A	N/A
Pick-up from registers.....03	$_____ (G50)	011 $_____ (G53)	N/A
Turn-in from registers.....04	$_____ (G100)	012 $_____ (G103)	N/A
Control and accountability.....05	$_____ (H46)	013 $_____ (H48)	023 $_____ (H48)
Cash over/short.....06	$_____ (I6)	N/A	N/A
Cost of handling bad checks.....	N/A	014 $_____ (I18)	024 $_____ (I18)
Cost of NSF checks written off.....	N/A	015 $_____ (I12)	025 $_____ (I12)
Bank and armored fees.....07	$_____ (J13)	016 $_____ (J28)	026 $_____ (J28)
Courtesy card costs.....	N/A	017 $_____ (M28)	027 $_____ (M28)
Encoding/microfilming for deposit.....	N/A	018 $_____ (N20)	028 $_____ (N20)
Investment cost from acceptance until credit by banking system.....08	$_____ (L19)	019 $_____ (L20)	029 $_____ (L20)
Fee charged by store.....	N/A	020 $_____ (B61b)	030 $_____ (B61a)
TOTAL.....09	$_____ (Total 01-08)	021 $_____ (Total 010-020)	031 $_____ (Total 022-030)

ORDER FORM

Computer Program for the Check and Cash Study

I would like to order the computer program which performs the calculations for the Check and Cash Analysis. The diskette is compatible with an IBM PC, with version 1.1 or above, and requires the Lotus 1-2-3 software program.

The cost is $5.00 for members, $10.00 for nonmembers, nonrefundable, plus 10% for handling and shipping.

	FMI Member Price	Nonmember Price	Quantity	Cost
SOFTWARE DISK	$5.00	$10.00	_____	_____
		Shipping & Handling (add 10%)		_____
		TOTAL Due with Order		_____

Prepayment is required. *Payable in U.S. Funds.*

Name _____

Company _____

Address _____

_____

_____

Phone _____

Send Orders to:

Publication Sales
Food Marketing Institute
1750 K Street, NW
Washington, D. C. 20006
(Make checks payable to FMI)

Acc't: 9-519-70/71

New from FMI on EFT

FMI Primer on Electronic Funds Transfer Systems in Supermarkets

There are many factors to consider when assessing the desirability and the viability of EFT systems in your stores, be they ATMs or Point-of-Sale direct debit systems. This Primer is a must for any company needing to consider the full scope of areas involved in going ahead with EFT. Below is the Table of Contents of the Primer:

Guidelines for EFF Systems
- Current Costs and Objectives
- Discussions with EFT Service Providers on your viewpoints
- Operational and Technical Factors

Consumer Issues
- What Might You Hear from Customers
- The Debit Card

EFT Network Configurations
- Diagrams and Explanations of Possible Configurations

Legal Issues
- Legal and Legislative Points Applicable to Retailers
- Retailer v. Bank Liabilities
- Antitrust and Sharing

Glossary of EFT and Banking Terminology

	FMI Member Price	Nonmember Price	Quantity	Cost
FMI PRIMER	$10.00	$20.00	_____	_____
		Shipping & Handling (add 10%)		____
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